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HYBRID QUAIL (*LOPHORTYX GAMBELI*
× *L. CALIFORNICUS*).

BY H. W. HENSHAW.

As instances of undoubted hybridization among birds are comparatively rare, the following case, or rather two cases, of hybridization between the Californian Valley Quail (*Lophortyx californicus*) and the Gambel's Quail (*Lophortyx gambeli*) deserve record.

While bearing a superficial resemblance to each other, these two Quails seem to be specifically quite distinct. The former is pretty closely confined to the West Coast, *i. e.*, from the western slope of the Sierras to the ocean. In the mountains it attains a vertical range of 7000 or 8000 feet. The general area occupied is well wooded and has a considerable rain-fall, though it is probable that in the peninsula, where it appears to be abundant, it becomes more or less of a desert bird. The Gambel's Quail is confined to the southern portions of the Interior Basin, where it inhabits only comparatively low altitudes. Though perhaps hardly to be termed a desert Quail, the area it occupies receives on the whole a much less copious rain-fall, and is consequently much more arid than that inhabited by its congener. As the two species occupy regions differing considerably in physical conditions, it was with much interest that I learned during the past season that there is a locality in San Bernardino County, California, along the line of the Southern Pacific Railroad, where they come together. At this point occur hybrids.

While examining Mr. Stephens's fine collection of Arizona birds, he called my attention to a 'hybrid Quail' which he received from Mr. Herron, of Colton, which he very kindly placed at my disposal. Subsequently Mr. Herron, with equal courtesy, gave me a second hybrid, which may have come from the same brood, or which at any rate was shot in the same locality, *viz.*, the vicinity of San Gorgonio Pass. The following descriptions will show the chief characteristics of these hybrids.

No. 1 most nearly resembles the California Quail. The brown of the head inclines to chestnut, the latter being the color of the head in *gambeli*. The anterior white band on the forehead is mixed with black. The feathers on the sides and back of the neck, which in *californicus* have two

minute roundish white spots near the end, giving a mottled appearance to these parts, are in this specimen unmarked with white except on the sides of the neck anteriorly, where the spots appear, though less marked than in the corresponding part of *californicus*; these parts, therefore, are nearly as in *gambeli*. The wine-colored abdominal spot of *californicus* is present, but the feathers of the abdomen, instead of being tipped with a broad band of black, giving the scale-like appearance of *californicus*, are only narrowly so margined in the lower portion; while above, especially in the buff-colored area (which is as deep in this specimen as in *californicus*), the black margins are reduced to an extremely narrow fringe of black. This specimen has the sides and flanks chestnut, as in *gambeli*, but the chestnut is not so deep. The edging of the tertiaries is pale, as in *gambeli*.

No. 2 more nearly resembles *gambeli*. The crown patch is chestnut, though hardly so light as in typical *gambeli*. The bristly feathers of the forehead are much darker than in *californicus*, and nearly as in *gambeli*. The feathers of the sides and back of neck show traces of white, but, as in the other specimen, much more closely resemble *gambeli*. In the abdominal spot the wine color of *californicus* is but faintly visible, being overlaid, so to speak, with black, thus being nearer *gambeli*. The spot on the upper portion of the abdomen is yellowish-buff, but paler even than in *gambeli*, the corresponding area in which bird it resembles in size and shape. The broad black edgings to the feathers of the abdomen and breast of *californicus* are in this specimen, as in the other, mainly confined to the lower portions, leaving the upper parts nearly immaculate. In this specimen the chestnut on the side and flanks is like that in *gambeli*. The edges of the tertiaries are very pale, as in *gambeli*.

The intermediate character of the specimens thus cannot be doubted, and is visible at a glance. But, it may be asked, What certainty is there that these specimens are veritable hybrids between birds specifically distinct, and not the ordinary 'intermediates' which are usually conceded to be proof of specific identity, not diversity? To such a query answer may be made that where a species inhabits two regions so diverse in climatic and other conditions as to produce at either extreme a variety or race, the intermediate links showing that the two forms grade together must come from areas intermediate, if not in actual geographical position, at least in respect to climate, etc. In the present case no such intermediate area exists. The California Valley Quail is abundant down to the very edge of the desert, within sight and hearing, so to speak, of the home of the Gambel's Quail. Specimens shot by myself within a few miles from the desert differ in no respect from specimens from the interior valleys of California, and certainly show no indication of an approach to the characters of *gambeli*. Specimens of the Gambel's Quail, on the

other hand, from just within the desert—the exact locality where the hybrids were found—might have come from Utah or Arizona so far as comparison shows to the contrary. They are in every respect typical of the species and reveal no tendency to an approach towards *californicus* as a result of their proximity to the habitat of that bird. The specimens in question can, therefore, be nothing else than pure hybrids.

To what extent hybridization between the two species occurs at this point is at present not known, but Mr. Herron promises to pay attention to the matter and ascertain, if possible, the relative proportion the hybrids bear to the unmixed birds. It will be found, probably, that the hybrids are comparatively rare, as of a considerable number of Gambel's Quails already shot at the same locality, Mr. Herron recalls nothing peculiar. Probably it will be found that actual mating between the two species does not take place, but that the hybrids are the result of unusual meetings between the opposite sexes of the two species, which are more in the nature of accidents than anything else.

A STUDY OF THE SINGING OF OUR BIRDS.

BY EUGENE P. BICKNELL.

[*Concluded from p. 154.*]

Agelæus phœniceus. RED-SHOULDERED BLACKBIRD.

IN mild winters squads of Red-winged Blackbirds sometimes wander northward ahead of time. These find the swamps unprepared for them, and keep silence save for the dull *chuck* which it is customary for Blackbirds to use on all occasions. But song always accompanies the general migratory movement however early it may be entered upon, and I have known their spring concert to begin as early as February 22. No matter how backward the season, they will not brook more than a reasonable delay, and after the middle of March will come and settle and start singing even when the swamps are still ice-bound and they themselves are the only sign of spring.